**IN THE CLAIMS**:

Please amend the claims as follows. This listing of the claims will replace all prior versions, and listings, of claims in the application:

1-12 (Canceled)

13. (Previously presented) A circuit arrangement for protecting from overheating a heating element whose resistance value is a function of its temperature, the circuit arrangement comprising:

a switch means;

a power supply coupled to the heating element for supplying a current to the heating element by means of the switch means;

a switch control circuit with an output for controlling the switch means such that the switch means is switched to a conducting state when the switch control circuit is in a first state and the switch means is switched to a non-conducting state when the switch control circuit is in a second state;

a current sensor means coupled to the heating element, the output of the current sensor means providing a signal proportional to the current flowing through the heating element;

a first scaling means whose output provides a signal proportional to a supply voltage of the heating element;

a first detector means having inputs each coupled to an output of a respective one of the current sensor means and the first scaling means, the first detector means having an output that provides a difference signal formed from the signals of the current sensor means and the scaling means; and

an evaluation circuit operable to compare the difference signal determined by the first detector means with a reference signal, the switch control circuit being

operatively connected to the evaluation circuit such that the switch control circuit can be switched from the first state into the second state by the evaluation circuit.

14. (Previously Presented) The circuit arrangement according to claim 13, wherein the current sensor means and the first scaling means are configured such that the signals which can be tapped at their output have the same magnitude at the nominal resistance of the heating element.

15. (Previously presented) The circuit arrangement according to claim 13 wherein a difference voltage can be detected by the first detector means only in the event of a change in the resistance of the heating element.

16. (Previously Presented) The circuit arrangement according to claim 13, wherein the evaluation circuit comprises a second detector means with two inputs and one output, wherein the output signal of the first detector means can be supplied to one input and the reference signal can be supplied to the other input, and wherein the output forms the output of the evaluation circuit.

17. (Previously Presented) The circuit arrangement according to claim 13, wherein the evaluation circuit has a second scaling means which is used to set the reference signal.

18. (Previously presented) The circuit arrangement according to claim 17, wherein the second scaling means is coupled to the supply voltage acting upon the heating element to derive the reference signal from the supply voltage.

19. (Previously Presented) The circuit arrangement according to claim 16, wherein the output of the second detector means is fed back to the input.

20. (Previously Presented) The circuit arrangement according to claim 13, wherein the power supply of the heating element is an AC voltage, and a rectifier arrangement and a smoothing circuit are connected between the first and the second detector means.

21. (Previously Presented) The circuit arrangement according to claim 13, wherein the switch means is a relay that becomes operative in the first state of the switch control circuit when the heating element is operating correctly.

22. (Previously Presented) The circuit arrangement according to claim 13, wherein the heating element is an electrical resistance heater, especially made from thick film paste, with PTC behavior where the resistance increases with increasing temperature.

23. (Previously presented) A heating device for fluids, the heating device comprising:
a heating element; and
a circuit arrangement for protecting from overheating a heating element whose resistance value is a function of its temperature, the circuit arrangement comprising:
a switch means;
a power supply coupled to the heating element for supplying a current to the heating element by means of the switch means;
a switch control circuit with an output for controlling the switch means such that the switch means is switched to a conducting state when the switch control circuit is in a first state and the switch means is switched to a non-conducting state when the switch control circuit is in a second state;
a current sensor means coupled to the heating element, the output of the current sensor providing a signal proportional to the current flowing through the heating element;

a first scaling means whose output provides a signal proportional to a supply voltage of the heating element;
a first detector means having inputs each coupled to an output of a respective one of the current sensor means and the first scaling means, the first detector means having an output that provides a difference signal formed from the signals of the current sensor means and the scaling means; and
an evaluation circuit operable to compare the difference signal determined by the first detector means with a reference signal, the switch control circuit being operatively connected to the evaluation circuit such that the switch control circuit can be switched from the first state into the second state by the evaluation circuit.

24. (Previously presented) A method for the fused protection from damage of a heating device for fluids, the heating device including a heating element and the heating device having a resistance value that is a function of its temperature, the method comprising:
detecting change in the resistance using a difference signal formed from a signal proportional to a current flowing through the heating element and a signal proportional to a supply voltage of the heating element; and
comparing the detected change in the resistance with a reference signal and selectively interrupting the heating circuit by means of a switch means in dependence upon the comparison of the detected change in the resistance with a reference signal.

25. (Currently amended) A circuit arrangement <u>in combination with a heating element, the circuit arrangement</u> for protecting from overheating <u>the</u> [[a]] heating element whose resistance value is a function of its temperature, the circuit arrangement comprising:
<u>the heating element;</u>
a switch;

a power supply coupled to the heating element by the switch and supplying a current to the heating element;

a switch control circuit with an output for controlling the switch such that the switch is switched to a conducting state when the switch control circuit is in a first state and the switch is switched to a non-conducting state when the switch control circuit is in a second state;

a current sensor coupled to the heating element, the output of the current sensor providing a signal proportional to the current flowing through the heating element;

a first scaling device having an output that provides a signal proportional to a supply voltage of the heating element;

a first detector having inputs each coupled to an output of a respective one of the current sensor and the first scaling device, the first detector having an output that provides a difference signal formed from the signals of the current sensor and the scaling device; and

an evaluation circuit operable to compare the difference signal determined by the first detector with a reference signal, the switch control circuit being operatively connected to the evaluation circuit such that the switch control circuit can be switched from the first state into the second state by the evaluation circuit,

wherein the evaluation circuit includes:

a second detector having two inputs and one output, wherein the output signal of the first detector is supplied to one input and the reference signal is supplied to the other input, and wherein the output forms the output of the evaluation circuit; and

a second scaling device that sets the reference signal.

26. (New) The circuit arrangement according to claim 13, further comprising:

the heating element.

27. (New) The circuit arrangement according to claim 13, wherein the evaluation circuit comprises:
second scaling means for setting the reference signal; and
second detector means for subtracting the difference signal of the first detector means and the reference signal, the second detector means having a first input, a second input, and an output, wherein the output signal of the first detector means is supplied to the first input and the reference signal is supplied to the second input, and wherein the output forms an output of the evaluation circuit.

28. (New) The circuit arrangement according to claim 27, further comprising:
the heating element.

29. (New) The circuit arrangement according to claim 28, wherein the second scaling means is coupled to the supply voltage acting upon the heating element to derive the reference signal from the supply voltage.

30. (New) The circuit arrangement according to claim 27, wherein the output of the second detector means is fed back to the second input.

31. (New) The circuit arrangement according to claim 28, wherein the power supply of the heating element is an AC voltage, and a rectifier arrangement and a smoothing circuit are connected between the first detector means and the second detector means.

32. (New) A circuit arrangement for protecting a heating element, whose resistance value is a function of its temperature, from overheating, the circuit arrangement comprising:
the heating element;
a switch means;

a power supply coupled to the heating element and supplying a current to the heating element via the switch means;
a switch control circuit with an output for controlling the switch means such that the switch means is switched to a conducting state when the switch control circuit is in a first state and the switch means is switched to a non-conducting state when the switch control circuit is in a second state;
current sensor means, which is coupled to the heating element, for outputting a signal proportional to the current flowing through the heating element;
first scaling means for normalizing the current and outputting a signal proportional to a supply voltage of the heating element;
first detector means for subtracting the signals of the current sensor means and the scaling means, the first detector means having inputs each coupled to an output of a respective one of the current sensor means and the first scaling means, the first detector means outputting a difference signal formed from the signals of the current sensor means and the scaling means; and
an evaluation circuit comparing the difference signal determined by the first detector means with a reference signal, the switch control circuit being operatively connected to the evaluation circuit such that the switch control circuit can be switched from the first state into the second state by the evaluation circuit, wherein the evaluation circuit comprises:
second scaling means for setting the reference signal; and
second detector means for subtracting the difference signal of the first detector means and the reference signal, the second detector means having a first input, a second input, and an output, wherein the difference signal of the first detector means is supplied to the first input and the reference signal is supplied to the second input, and wherein the output of the second detector means forms the output of the evaluation circuit.

33. (New) The circuit arrangement according to claim 32,

wherein the first scaling means includes a voltage divider having a first resistor and a second resistor, and

wherein the first detector means includes a first comparator having a first input connected to the output of the current sensor means by a third resistor, and a second input connected to the first scaling means.

34. (New) The circuit arrangement according to claim 32, wherein the second scaling means includes a second voltage divider having a fourth resistor and a fifth resistor; and

wherein the second detector means includes a second comparator having a first input connected to the output of the first detector means by a smoothing circuit, and a second input connected to the second scaling means.